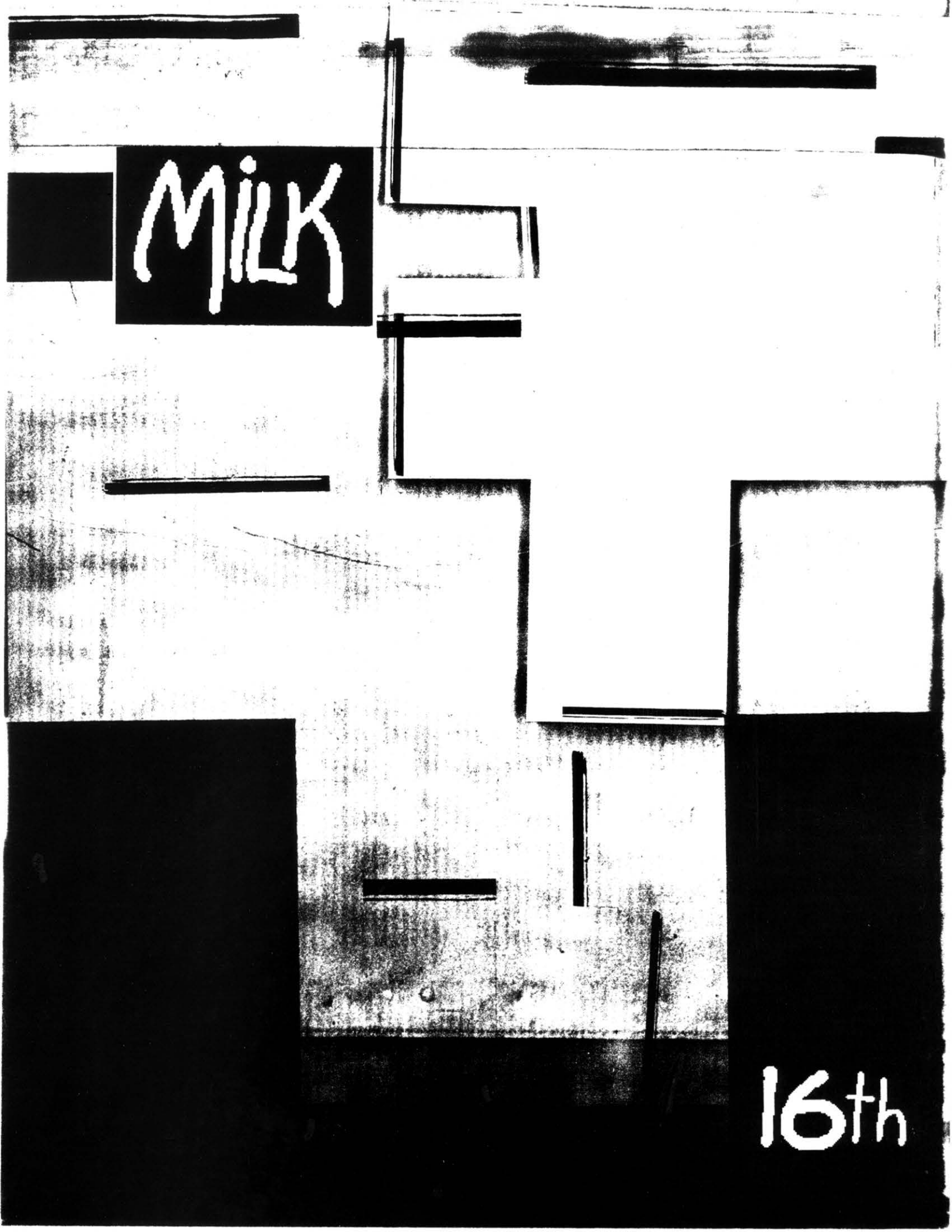

MILK
16th

The Radium Water Worked Fine Until His Jaw Came Off

* * *

Cancer Researcher Unearths A Bizarre Tale of Medicine And Roaring '20s Society

By Ron Winslow
Staff Reporter of The Wall Street Journal

In 1927, a steel mogul and socialite named Eben MacBurney Byers tumbled from the top berth of his private Pullman compartment en route home to New York from the Harvard-Yale football game. He was apparently engaged in some vigorous post-game revelry at the time.

What happened next led ultimately to his gruesome death 4½ years later—and to his place as a central character in a bizarre episode in U.S. medicine.

The saga of Mr. Byers is the subject of a report in today's Journal of the American Medical Association. While it has timely implications for contemporary medicine, it also provides an evocative look at a period in medicine before regulators and lawyers spoiled the fun.

"Byers was the personification of the Roaring '20s," says Roger M. Macklis, principal author of the report and a radiation oncologist at the Dana Farber Cancer Institute in Boston and the Harvard Joint Center for Radiation Therapy. "He was into everything."

Golfer and Ladies' Man

The chairman of A.M. Byers Steel Co. and a director of Westinghouse Electric & Manufacturing, Mr. Byers was also a U.S. amateur golf champion, a horse racing enthusiast and, by reputation, an ardent ladies' man.

Dr. Macklis's interest in Mr. Byers was provoked in part by the doctor's acquisition late in 1989 of four mostly empty bottles of a patent medicine called Radithor. It was a status drink: At $1 a bottle, only the well-to-do could easily afford it. And it was a health drink—marketed by an entrepreneur named William J.A. Bailey, it promised to cure more than 150 maladies.

Mostly, Mr. Bailey sold it as an aphrodisiac. "Improved blood supply sent to the pelvic organs and tonic effects upon the nervous system generally result in a great improvement in the sex organs," touted a pamphlet entitled "Radithor, the New Weapon of Medical Science," which was mailed to doctors in the mid-1920s.

Radithor's magic ingredient was radium. The concoction rode the crest of the Mild Radium Therapy movement, a phenomenon in U.S. social circles shortly after the Curies discovered radium at the turn of the century. It was based on the premise that radiation, taken in minute doses, provided a metabolic kick to the body's endocrine system and infused depleted organs with energy.

Distilled Water and Radium

Dr. Macklis says Mr. Bailey "was a born con man" who had been peddling various miracle cures, especially for impotence, for years. But none achieved the success of Radithor, an over-the-counter tonic he asserted was the result of years of laboratory research, but which was really just distilled water laced with one microcurie each of two isotopes of radium.

He sold more than 400,000 bottles for $1 each—a 400% profit, says Dr. Macklis, adding: "He was the chief impresario in the radioactive patent medicine field."

Mr. Byers was 47 when he fell out of the berth and injured his arm. Over the next several weeks, he complained of muscular aches and a run-down feeling that undermined his performance both athletic and, it was rumored, sexual, Dr. Macklis reports. A Pittsburgh physiotherapist recommended Radithor.

For the next two years, Mr. Byers gulped two or three bottles a day. His activities while under its influence aren't well documented. But initially, he was ap-

Please Turn to Page A6, Column 2

Continued From First Page

parently so satisfied with the results that he sent cases of it to business partners and girlfriends, and even fed it to his race horses.

The science of the day gave at least a measure of support to Mr. Byers's faith in radium water. And U.S. regulatory agencies at the time were more concerned about truth in advertising than about potential harmful effects. The Federal Trade Commission, for instance, took action against makers of potions that *lacked* advertised levels of radioactivity.

Over two years, Mr. Byers guzzled perhaps 1,400 half-ounce bottles of the potion, Dr. Macklis says. He finally quit in October 1930, complaining to his doctor then that he'd lost "that toned-up feeling." He began to lose weight and experience headaches; many of his teeth fell out.

By 1930, the FTC had begun to raise questions about another advertised claim of radium-water medicines: that they were harmless. It asked Mr. Byers to testify at hearings in 1931, but by then he was too sick. An agency lawyer dispatched to take his statement at his mansion on Long Island was aghast.

Mr. Byers's "whole upper jaw, excepting two front teeth, and most of his lower jaw had been removed," the lawyer reported. "All the remaining bone tissue of his body was disintegrating, and holes were actually forming in his skull."

By the end of the year, the FTC ordered Mr. Bailey's operations closed. And on March 31, 1932, Mr. Byers died in a New York City hospital. He was 51. The next day, a front-page headline in the New York Times proclaimed the medical examiner's initial autopsy findings: Mr. Byers died of radium poisoning.

The news alarmed some members of the upper class, although James J. Walker, then mayor of New York City and an avowed user of radium water, at first resisted warnings to stop. In Pittsburgh, there were whispers in the press that a lady friend of Mr. Byers had also died of a mysterious ailment. Health officials in some cities ordered store shelves cleared of such potions. And some doctors stepped forward with evidence of other cases. A doctor went on a New York radio program and held radioactive bones of one victim in front of a Geiger counter to demonstrate "the deadly sound of radium," Dr. Macklis says.

Dr. Macklis bought his bottles of Radithor from a dealer in medical antiques; he's not saying how much he paid. Then he and two colleagues at the Harvard Joint Center, Marc R. Bellerive and John L. Humm, conducted a radiochemical analysis of the Radithor. It confirmed that Radithor was laced with significant amounts of radium isotopes.

Real Effects

Using a complex computer program, the scientists reconstructed the radium's life cycle through dozens of generations as it decayed to form new isotopes, and calculated the level of Mr. Byers's exposure. "He took enough radium to kill four people if he took it all at once," Dr. Macklis says. "The mystery is how did Byers survive so long, feeling so good, and have such a super-lethal burden in his body?"

He speculates that despite Mr. Byers's macabre demise, it is possible that chronic, low-level doses of powerful "alpha" radiation really do have at least a temporary stimulative effect, probably by provoking a defensive response that triggers production of fresh blood cells within the bone marrow.

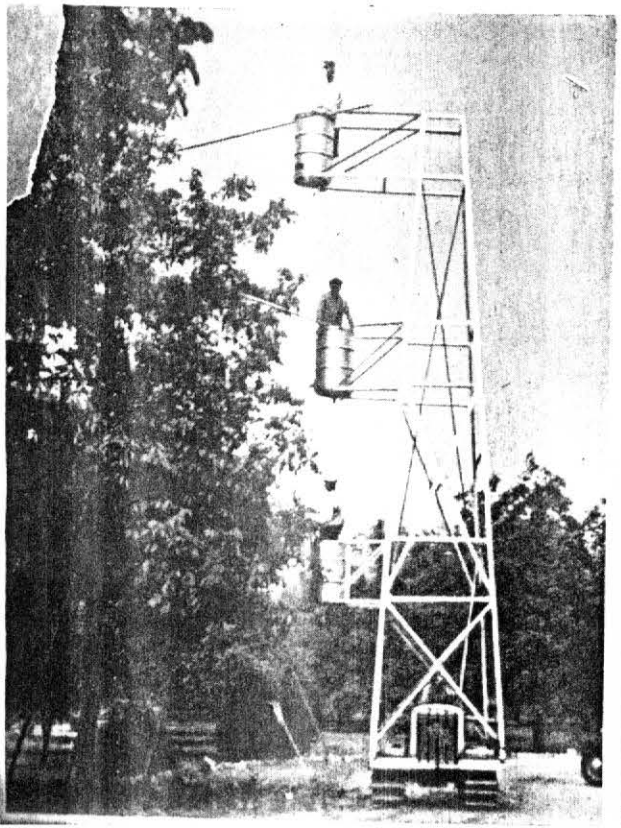
Dr. Macklis and his colleagues also believe if alpha radiation could be safely harnessed, it could become a precise medical weapon that would attack cancerous cells without damaging nearby healthy tissue. Two years ago, Dr. Macklis succeeded in accomplishing that in mice.

It was his search for information on the impact of alpha radiation on people that led Dr. Macklis to the lost story of Mr. Byers, which he pieced together from medical literature, press accounts and historical documents.

In the end, Mr. Byers's death caused the collapse of the radioactive patent medicine industry. But all along, Mr. Bailey insisted that his potion was safe. After all, he said, he had probably drunk more Radithor than anyone else, and he felt fine.

Nearly 20 years after Mr. Bailey's death in 1949 of bladder cancer, medical researchers exhumed his remains. They had been ravaged by radiation. They were still "hot" when pulled from the ground.

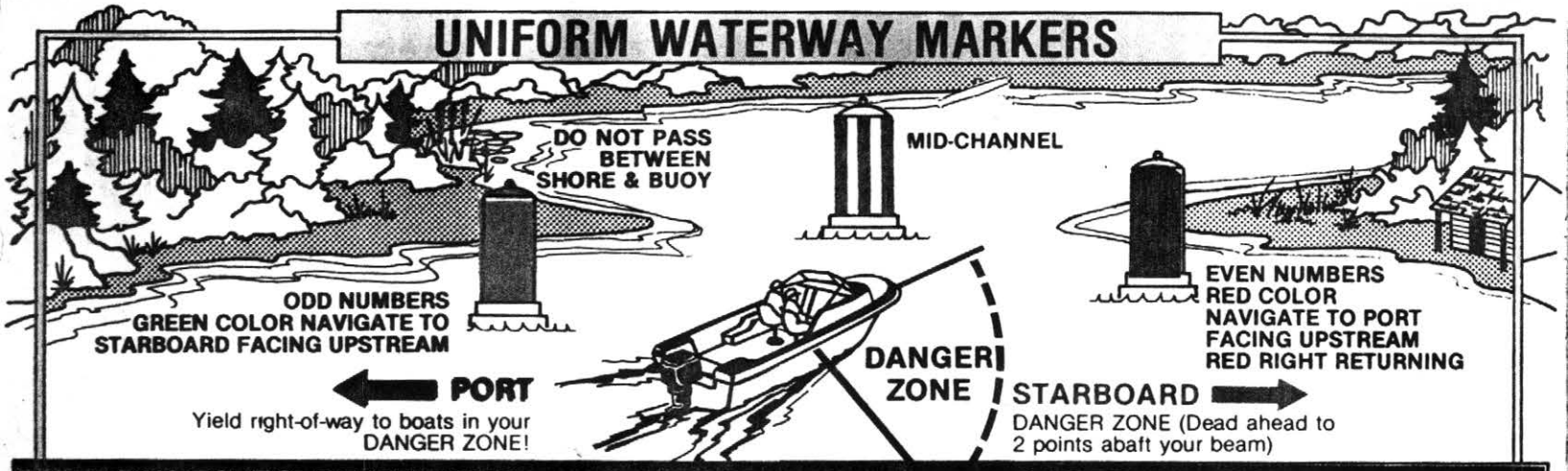
Wall Street Journal Aug 1 1990



Hoodlike Gas Mask Protects Babies

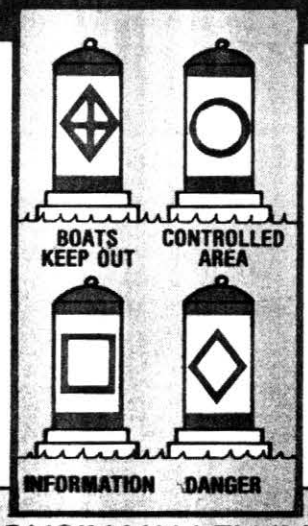
THREE years of research have solved the grim problem of fitting babies with gas masks, according to the British designer of the model illustrated in use below. Rubberized gasproof fabric completely incloses an infant from the waist up in a capacious hood with a large cellulose acetate window. A hand bellows operated by the parent supplies pure filtered air for the baby to breathe.

UNIFORM WATERWAY MARKERS


DO NOT PASS BETWEEN SHORE & BUOY
MID-CHANNEL
ODD NUMBERS GREEN COLOR NAVIGATE TO STARBOARD FACING UPSTREAM
EVEN NUMBERS RED COLOR NAVIGATE TO PORT FACING UPSTREAM RED RIGHT RETURNING
DANGER ZONE
PORT
Yield right-of-way to boats in your DANGER ZONE!
STARBOARD
DANGER ZONE (Dead ahead to 2 points abaft your beam)

RULES TO REMEMBER

1. **RIGHT OF WAY:** Generally given to least maneuverable craft.
2. **OVERTAKING-PASSING:** Boat being passed has the right-of-way. **KEEP CLEAR!**
3. **MEETING HEAD ON:** Keep to the right.
4. **CROSSING:** Boat on right has the right-of-way. Slow down and permit him to pass.



SAFETY SUGGESTIONS

- Keep away from locks and dams
- Obey all boating regulations
- Be alert at all times
- Watch for weather changes
- Don't overload or overpower
- Use Coast Guard approved personal flotation devices (PFD's)
- Stay clear of swimmers, divers and docks

REMEMBER - CLEAN LAKES ARE MORE FUN!

Distributed in the interest of boating safety by: WISCONSIN VALLEY IMPROVEMENT CO. WAUSAU, WI

figure 3

5. Keeping the moon above your head, move it about 45° to the left and toward your body by bending your left elbow as seen in figure 4. Shade in position 2. Which side is lighted, the right or the left?

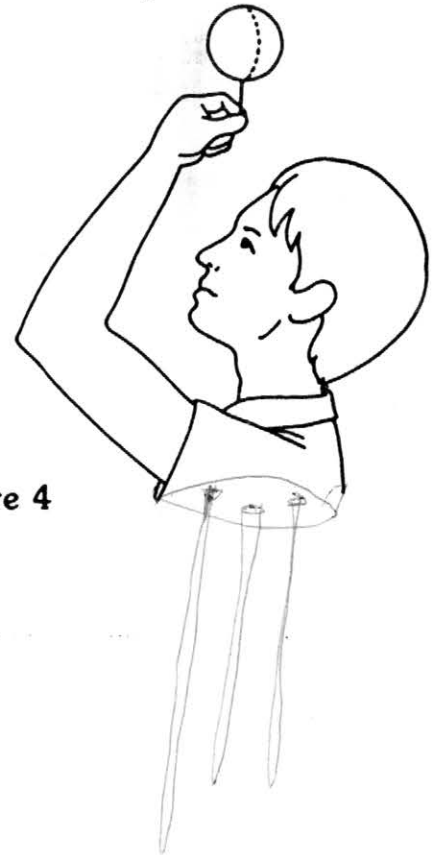


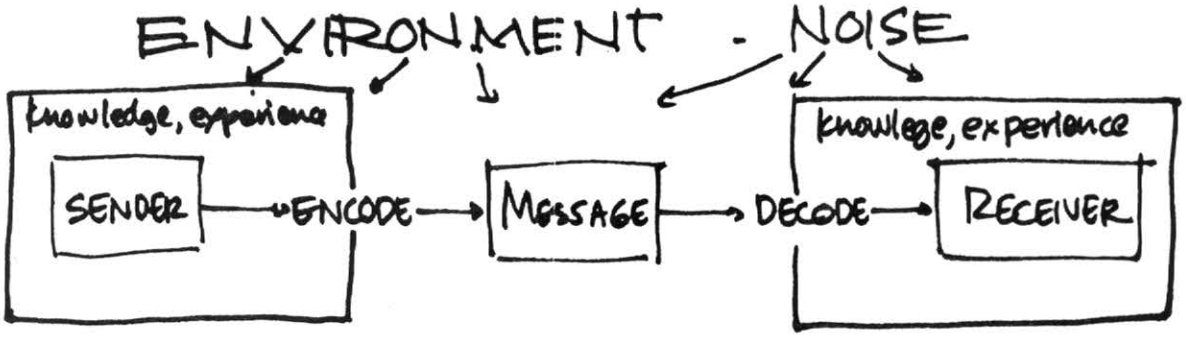
figure 4

© Facts on File, Inc.

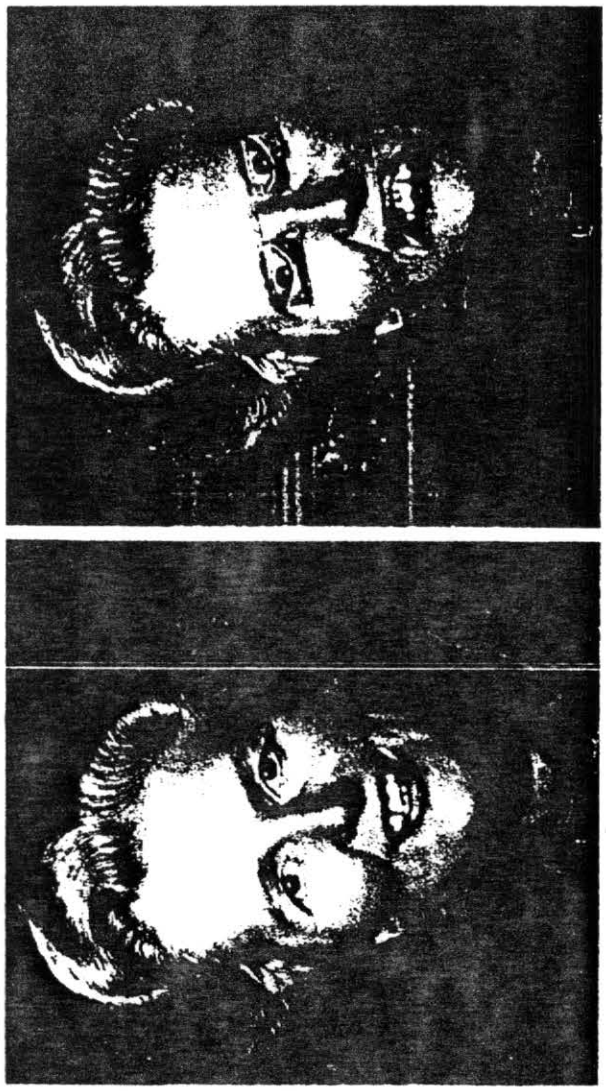
TEXAS LAWRENCE

30TH MAY

SO CALLED FRIEND
YOU OWE IT ALL TO ME
HERE ME NOW
EVERYDAY NOW
FADE AWAY
SO IN LOVE
LOVER
I GOT A FEELING
PRAYER FOR YOU



An Elaboration of the Shannon-Weaver Communication Model



Excitement mounting, Jake fell to his hands and knees. He was tracking critters; searching for fruiting bodies. Jake tried very hard to be quieter and quieter. He was being so quiet that his thoughts were very loud. Jake noticed that although Toby kept plodding along upright, his methodically slapping sneakers made no sound. Toby felt light headed; Jake felt smaller.

Then, Jake found *it*: a sizable gob of clear, glistening, gelatinous material, weighing heavy on a broad leaf of a small Mayapple. Jake's head was dancing. It was brilliant orange. It was luminous. It sparkled. And it was winking at him. Jake's tongue was reaching. He licked, noisily s-l-l-urped up half the jelly. He rolled it around on his tongue. He shivered violently as it slid down his throat: *slime mold!!*
He held the remainder out to Toby.
"Hey Toby, here, have some orange Jell-o."
Toby shivered violently as the mold melted in his throat, too.
"Huh, are you sure that wasn't pineapple? Hey, Jake, you look kind of small." Toby said, wiping his lips.
"Come to think of it, Toby, you look kind of light-headed," replied Jake.

They continued on.

On his hands and knees, Jake was as happy as a vermilionid in an ant's nest. The ground burgeoned with secrets. Mud felt cool and damp on his hands and knees. Everything was so vivid, so clear, so astonishing, so big, so very large .... so very much larger than he. Jake hadn't noticed that he was getting so small. Well, perhaps he could chase down a wood roach in that dead log...

~~Breaststroke~~

Meanwhile, Toby was looking up. In fact, the situation-in-general was looking up for Toby. He was attentive to intriguing sounds above him: circular bird twerping, linear tree creaking. He ventured up to the tree tops, not realizing the path remained on the ground. (Jake had noticed that Toby's silent sneaker-slapping and unprecedented avoidance of trip-ful branches were probably due to the fact that his feet never quite touched the ground). Toby's head was light, his ears were ringing, ideas were burgeoning, tape recorder taping notes.

Back among the fallen leaves, Jake, now small and white and soft as a newly-hatched cicada (his clothes had not shrunk with him), happened on a lovely morchella esculenta only slightly larger than he. Crawling in its crennels was an ancient ant. He and Jake made fast friends. The old Formicid regaled Jake with stories of his youth - particularly a splendid, hot summer living on Coke in the trunk of a dusty Ford.

My, it runs a day.

I WAS AT
THE LOCAL
FOOD STORE

IN THE CHECK OUT LINE
BY THE FROZEN FOOD SECTION

A VOICE CAME OVER
THE PAGING SYSTEM

" WILL JIM JONES...
PLEASE COME TO THE
CHECK OUT COUNTER...PLEASE
JIM JONES TO THE CHECK OUT
COUTER ...PLEASE!"

A FEW SECONDS AFTER
THE PAGE

THE WOMAN BEHIND ME
TURNED TO HER SON
AND SAID

" HONEY DID YOU REMEMBER

TO GET THE KOOL-AID "

Very minimalist,
Very post-modernist,
Sort of
like David
Letterman without
the jokes.

Notes

idea + word = purpose = security
action definition

paint/painter
sculpt/sculptor
think/thinker

Security produced through direction and Purpose-

Definitive Meaning-

in any ARTform becomes IDENTITY

EVEN HERE

my individuality

to be wholly dissociated
from the work is neither good or bad but only alternative
in search of

Follicullitis
Fontanelle
Hallusualgus
Falciparum Malaria
Exophthalmosamam
Fulgoridnation
Glomeruli Da Woild
Engorged Laxatival

BLOW CHARLIE	SNIFF COCAINE
BLOW HORSE	SNIFF HEROIN
BLOW POT	SMOKE A MARIJUANA CIGARETTE
BLOW YOUR MIND	GET HIGH ON DRUGS
BLUE ACID	L.S.D.
BLUE BARRELS	L.S.D.
BLUE BIRDS	AMYTAL
BLUE CHEER	L.S.D.
BLUE DEVILS	AMYTAL
BLUE HEAVEN	L.S.D.
BLUE HEAVENS	AMYTAL
BLUE MIST	L.S.D.
BLUE VELVET	PAREGORIC MIXED WITH ANTIHISTAMINE
BLUES	AMYTAL
BOBO BUSH	MARIJUANA
BOMBED	INTOXICATED ON DRUGS
BOMBIDO	INJECTABLE AMPHETAMINE
BONG	DEVICE USED TO SMOKE MARIJUANA
BOO	MARIJUANA
BOOST	STEAL
BOOT	EFFECT OF A DRUG
BOOZE	ALCOHOL
BOSS	REAL GOOD
BOTTLES	INJECTABLE AMPHETAMINE
BOXED	IN JAIL

ANALOG	A CHEMICAL COMPOUND STRUCTURALLY SIMILAR TO ANOTHER, BUT DIFFERING OFTEN BY A SINGLE ELEMENT WITH THE SAME PROPERTIES AS THE ELEMENT IT REPLACES
ANESTHETIC	SUBSTANCE THAT BRINGS LOSS OF SENSATION WITH OR WITHOUT LOSS OF CONSCIOUSNESS
ANGEL DUST	P.C.P.
ANIMAL	P.C.P.
ANORETIC DRUGS	DRUGS MANUFACTURED AND MARKETED TO REPLACE AMPHETAMINE AS APPETITE SUPPRESSANTS. PRODUCE MANY OF THE SAME EFFECTS AS AMPHETAMINE, BUT GENERALLY LESS POTENT. INCLUDES DIETHYLPROPION, CHLORPHENTERMINE, BENZPHETAMINE, ETC.
ANTIHISTAMINE	ANY OF VARIOUS COMPOUNDS THAT COUNTERACT HISTAMINE IN THE BODY AND THAT ARE USED FOR TREATING ALLERGIC REACTIONS (AS HAY FEVER) AND COLD SYMPTOMS
ARE YOU ANYWHERE?	DO YOU SMOKE MARIJUANA CIGARETTES?
AROUND THE TURN	GONE THROUGH WITHDRAWAL PERIOD
ARTILLERY	EQUIPMENT FOR INJECTING DRUGS

B

BACKTRACK	TO WITHDRAW THE PLUNGER OF A SYRINGE BEFORE INJECTING DRUGS TO MAKE SURE THE NEEDLE IS IN PROPER POSITION
BAD SEED	PEYOTE
BAD TRIP	UNPLEASANT EXPERIENCE WITH L.S.D.
BAG	A CONTAINER OF DRUGS (USUALLY A 1 OUNCE PACKAGE)
BAGMAN	SUPPLIER
BALLOON	SMALL PACK OF NARCOTICS

ESCAPE FROM THE WOOD OGRES

Being a play with several different parts, by John Eberly 5.10.89
Title suggested by Ken Haug 5.7.89.

The parts: Dale-Full-time mechanic, part-time woodcutter and Bassist.
Tuck-Wood ogre with a birthday.
Butch-Sensitive artist type with too many old girlfriends, also a singer in a band.
Ken-Guitarist extrordinaire with short wood ogre-type beard (goatee).
Andy-Drummer in a band, too pretty to be a boy.
Feed Cap-Drunk ex-college student drummer(?).
Assorted wood ogres throughout. -well, you'll see...

ACT ONE:
January, 1988: Shed, north of Wichita, Kansas. The band is freezing and rehearsing.

Dale: Hey, guys, I talked to Tuck and he said we oughta go up north to Seneca and play somewhere.
Ken, Butch, and another drummer: Naw...

ACT TWO:
Fall, 1988: Shed again.

Dale: Hey guys, I talked to Tuck and he wants us to come up to Seneca and play-whaddayasay?
Ken, Butch, and Andy: When? Will we get paid? $200.00.
Dale: Uh, January 15th. Yeah, he said we'd get paid, I told him, $200.00.
(This falls through again).

ACT THREE:
January, 1989-Freezing in the Shed again.
Dale: Hey guys, I've got a date for Tuck's-May 6th, his birthday.
Ken, Butch, Andy: For $200.00?
Dale: Yeah, uh, SURE! Sure...$200.00 dollars, huh? Yeh,sure..

ACT FOUR:
May 6, 1989. A Hogshed out in the boonies in Northeastern Kansas. On one side, a small grouping of wood ogres, guys in their thirties dressed like rejects from a bad Hell's Angels movie, huddle around an outdoor cooker, slowly roasting a pig. On the other side, a muddy smelly hogg wallow, home to a bunch of muddy smelly hoggs. Inside, the band sets up.

Feed Cap: Huh. Y'think I could play the drums on a song later? i took drums at Manhattan. Mine were better than them, I had Ludwig-what're them? Yamahama's? Never heard of 'em-HEE HEE Hee hee hee..

Pat, a seriously crazed wood ogre, to Ken: Why'd you write all those songs about me? How'd you know I was on disability?

Ken: What?

(ACT FOUR cont.)

Butch: Hey Andy! You see the movie "Deliverance"? Watch out when you go backstage (which was outdoors) they'll have you squealin' like a pig!

Drunken wood ogre eavesdropping: Squeeeeeeee! Heh, heh! Squeeeeee! That's right Boy! Squeeeeeee! Ya shore are pretty! Squeeee!

Drunken wood ogre girl, one of Butch's ex-girlfriends: Hey Butch, you haven't changed a bit. You're still as cute as you were when you were 16! (she slobbers on his leather jacket) Heh. I'm here with my husband Buzz...that's him over there talkin' to my ex-husband Steve. My lover should show up pretty soon, I want you to meet him. He reminds me of you! Hey Butch, somebody asked me if the singer was gay...I told him I could DEFINITLY say your not! You're not, are you? Butch?

Butch: What? Uh, no, not me! He must be thinking of our drummer...

ACT FIVE:
It's 1;30 in the morning, the band has played 3 sets, and they're tearing down equipment. Dale has changed from an all-white outfit into a new ensemble. The smells of barbeque and hogg droppings intermingle with a huge cloud of cigarette smoke and spilled beer. The crowd of wood ogres hang back by the foos-ball table, quickly draining the 5th keg of beer. Getting bored, they contemplate beating up the band, or at least getting Dale's white outfit dirty, not realizing he's already changed.

Andy: How much did we make?

Butch: I dunno, ask Dale, he's the booking agent..

Andy: Where's our money?

Dale: Tuck said he couldn't pay us, nobody passed the hat or

Tuck (drunk): Uh, Eeuh, ngg... Guess we shoulda charged admission...

(Dale and Tuck move over to stage right-Dale pulls out his billfold and hands Tuck a wad of bills. Then he turns around so the band can see them, and takes his money back from Tuck.)
Dale: Here you go guys, it comes out to $13.00 apiece!
Ken, Butch, & Andy: Grumble (They take their cut).

Dale: I don't know what happened, I thought we'd make more than that..

Ken: Pearls before Swine...

Butch: What'd you expect?

(Andy quits band, everyone leaves. As their van pulls off into the night, a wood ogre calls out after them: "YEEEEHA!" They drive back to Wichita, leaving a little piece of the Ozarks behind in what used to be their hometown.

THE END

Room 143

PLEASE BE AWARE

THAT YOU HAVE LEFT YOUR

"DO NOT DISTURB" SIGN ON THE OUTSIDE

OF YOUR DOOR. BECAUSE OF THIS,

WE WERE UNABLE TO CLEAN YOUR ROOM.

SORRY FOR THE INCONVENIENCE.

Shirley

in separates immediately from the background.
hts are another instance of elements which are effective because of
stand out in a single visual unit. Conversely, their effect is diminish-
rast is diminished. Many a driver has complained that on street ablaze
green neon signs it is difficult to distinguish the red and green lights of
. But if a large black square is placed behind the lights to block off the
kground in a definite shape, immediate organization of this space and
inst it takes place in the motorist's brain.
first function of a piece of printing is to capture attention, design with
that the designer understand how to make visual units group together
anization in th observer's mind. Many typographical composition
look as though the single goal had been to try to camouflage the
sometimes the success is phenomenal. Camouflage in typography is
t of untidiness. Sharp definition requires a high degree of organization
ts involved so that they will stand out as immediately as the checker-
the end of a highway.
established rules which can help a designer make this analysis of
structure, rules arrived at through experimentation with the way in
receives light stimuli. They all involve the relationship between the
nd the space which flows around and within it. The type line itself is,
primary example, for the reader identifies word units by the fact that
rated from each other by space. This is elementary spatial organization,
already met it in an earlier chapter. But the principles that apply for
ply for all other units of the composition. The following discussion
rious kinds of relationships which can be created in given space. These
may be summed up as follows:
nity of units (*proximity*)
uation of form (*direction*)
ity of units (*similarity*)
of isolated units (*closure*)

of units

almost an insult to the intelligence of the reader to state seriously as
typographic design that any element has an affinity to the element o